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(54) Title: A METHOD OF DETERMINING THE SOUND PRESSURE RESULTING FROM A SURFACE ELEMENT OF A SOUND EMITTING SURFACE
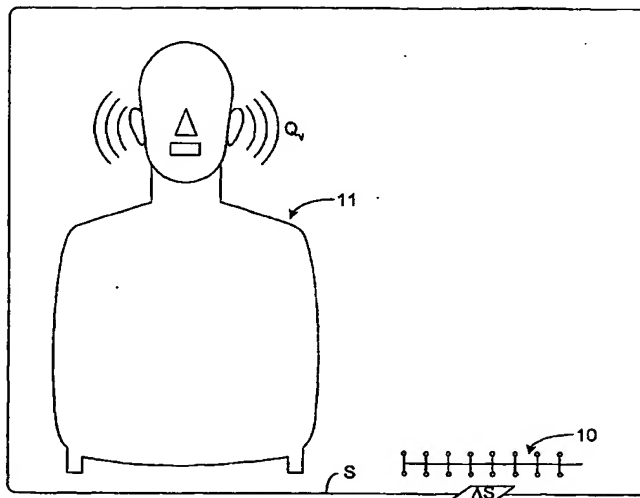
(57) Abstract: A three-dimensional array (10) of microphones (M) is used to determine the three-dimensional sound field above a surface element (ΔS) of a sound emitting surface (S), and the air-particle velocity (u_n) at the surface element (ΔS) is determined using Near-Field Acoustical Holography (NAH). A volume velocity sound source (11) is used to emit a volume velocity (Q_v) in a listening position, and the array (10) of microphones (M) is used to determine the resulting three-dimensional sound field above the surface element (ΔS), and using NAH the resulting sound pressure at the surface element (ΔS) is determined. The acoustic transfer function (H) between the surface element (ΔS) and the listening position is assumed to be reciprocal and is determined as the ratio of the resulting sound pressure at the surface element (ΔS) to the volume velocity (Q_v). The sound pressure in the listening position resulting from the surface element (ΔS) is determined as $\Delta p = H.(u_n. \Delta S)$.